



*Willis O'Brien, a genius at stop motion photography, conjures up one of his animated sequences.*



# WIZARDS OF WONDERLAND

## HOW HOLLYWOOD CREATED KING KONG

By Art Ross

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Out of the depths of the thirties depression came Hollywood's greatest fantasy-adventure film, *KING KONG*. The year was 1933. When Kong opened simultaneously at New York's Roxy and Radio City Music Hall theatres, he drew standing room only crowds and helped bail RKO out of its financial woes during that touch-and-go period.

From the original concept, the brainchild of Edgar Wallace and producer Merian C. Cooper, an adventurer/filmmaker, came this marvelous tale of horror, love, and death. But could it be brought to the screen in all its magnificence of conception? It was a prodigious task, but one that the technical wizards of wonderland were ultimately able to accomplish through talent and sheer determination.

Cooper and his co-producer/director, Ernest B. Schoedsack, had the good luck to hire Willis O'Brien, the master of stop motion photography. This technique, *stop motion animation*, or the frame-by-frame shooting of models in which a slight adjustment is made to each arm, or leg, or facial feature between each exposure, is the single most important special effects technique utilized in the making of the 1933 version of *King Kong*. Great care must be taken with each adjustment of the model part, lest the

finished film appear jerky and unreal. Stop motion animation works to simulate life-like movement through the phenomenon known as *persistence of vision*, which gives the single frames of static film a sense of life and movement as they pass through the projector at normal speed. It is an illusion of the eye and the mind that makes such movies possible.

Willis O'Brien was a genius who knew exactly how to use this phenomenon to create wondrous prehistoric beasts battling the mighty ape. An earlier stop motion animation film of his, *The Lost World*, required close to 1000 separate movements of every model for every minute shot. That translates to about 10 hours of work for every 30 seconds of film achieved.

Central, of course, to the making of *King Kong* is the brilliant use of miniatures and models. While Kong appears to be a 50-foot monster, he is actually an 18 inch model cavorting about in miniature sets. The lifelike look of Kong was the work of a young Mexican sculpture student, Marcel Delgado. O'Brien and Delgado perfected their models to highly sophisticated levels. One miniature tyrannosaur had over 50 moving parts that could be manipulated.

Each prehistoric creature was built over steel armatures with finely machined ball-and-socket joints that simulated the bone structure of the beasts. "Flesh" was made of sponge or cotton. "Skin" was made of thin latex. The real trick to create realism with the animals, however, was the brainchild of Delgado. He placed layered strips of latex under the skin to create the look of muscles and air bladders,

which when inflated and deflated rhythmically, created the illusion that the beast was breathing. (A trick Ray Harryhausen was to adapt later in many sci fi films of the '50s, including *20 Million Miles to Earth*.)

These lifelike models were placed on very lifelike miniature sets to capture even greater realism. The backgrounds were generally painted "flats"; in front of these would be as many as three planes of glass. These were also painted, but when placed between the flats and the camera, gave the scene an incredible illusion of depth and detail. Positioned around these pieces of artwork were solid pieces of scenery through which Kong and the other creatures would move.

The dressing for Skull Island's lush jungles were composed of various elements. Trees were made from wood and overlaid with tissue "skins" to simulate the texture of bark. Japanese miniature trees (bonsai) and other living plants added reality to the miniature jungle sets.

Kong's paw was no miniature. It was a giant prop created to work with heroine, Fay Wray, in many sequences. It was constructed somewhat like the miniature models. It had joints like a real hand, so that the fingers and thumb could be wrapped around Miss Wray's lightly-clad body. To give it spacial movement, it was attached to a hoisting mechanism, so that it could rise in the air with the screaming girl inside the hairy paw. Miss Wray lived in mortal terror of falling out of Kong's grasp throughout the making of the film, but fortunately she never did.

The film had another giant limb. A massive foot used in closeups to show





*Kong battles Pterodactyl with Fay Wray as the prize.*

Kong rampaging the native village and stomping the poor natives to death. But the most spectacular giant prop of all was the mammoth bust of Kong.

It was made to the actual proportions of a 50-foot high monster, consisting of head, shoulders and chest. It took some 40 bear skins to cover its wooden-metal skeleton. It was so big, three men could work inside it to control its eyes, nostrils, and mouth. For mobility, it was mounted on a large studio trolley.

The eyes were as large as melons, the teeth 10 inches in length and seven inches round the base. The giant mouth, measuring six feet across, was large enough to chew up and swallow many an unwilling victim.

It was an amazing piece of puppet construction on a giant scale. That's why it seemed so menacing and horrific.

One innovation in special effects that gave Kong added realism was the ability to combine the ape's activities in the same frame as the humans. This was done by a process called *matting*.

In simplified terms, this is how matting works. It is like a *mask*. You mask off part of the camera lens, so that the part of the film behind the mask is not exposed with the rest of the frame. This then allows for the addition of added images in that unexposed area that one could not record at the same time with the rest of the footage.

The masking technique in *King Kong* was a bit more complex, relying on special filters to achieve the matting. Essentially it worked by shooting dif-

ferent scenes through separate colored filters in colored lights. By filming different scenes on film stocks of complementary and opposite colors, and then optically combining them, OBie and his team were able to shoot two different sets of action and process them, so that they gave the illusion of being all shot at the same time in the same place.

Another well-known technique used in *King Kong* was *rear projection*. It is simply the process of projecting an image onto the back of a screen. When Fay Wray, for example, is watching Kong battle the dinosaur in horror, the giant beasts are actually models moving in stop motion projected onto the rear of a translucent screen. Miss Wray, sitting on a tree trunk, is then placed between the screen and the camera, which films both her and the fighting creatures simultaneously.

Rear projection was important to Obie in making *King Kong*, because it could create hugeness in size of one object in relation to another. (The giant beast constantly pursuing the hero and heroine in the sci fi flicks of the fifties and sixties made great use of rear projection and matting techniques.)

How did the sound effects of *King Kong* bellowing and roaring his way through Skull Island and Manhattan come about? The roars had to be exceptionally loud, long, and terrifying. The sound technicians, led by Murray Spivack, recorded the roars of a number of big cats, then played them back at a speed slower than the one they had initially recorded. It lowered the

sound and gave Kong a deep, throaty roar.

A tougher problem was devising a sound for the dinosaurs. Expert opinion had it that dinosaurs had no vocal cords and thus were incapable of making sounds. Taking liberties with Science, however, the Kong technicians created a series of hisses, shrieks, and grunts that gave the viewer the feeling Skull Island was not a very safe place to be, if you were a mere mortal.

Of course, the great musical score by Max Steiner also sustained the mood of terror, danger, violence, and pathos throughout.

The climax of the movie is Kong's epic battle atop the Empire State Building, the then tallest structure in the world! You will recall Kong, cornered yet unafraid, fights the squadron of Navy biplanes to the death with New York's majestic skyline in the background. To accomplish this, co-producer Schoedsack shot a great deal of footage on location, including the "attacks" on the building by the biplanes. It has been claimed by some that this classic sequence was achieved by using a man in a monkey suit or a giant motorized robot. This was definitely *not* the case! All the Empire State footage was the combination of Schoedsack's location footage, including the aerial stunts of the planes, combined with the same type of stop motion animation trickery used throughout the rest of the film. No men in ape suits were used, not in the 1933 version! (This was not true in the more recent color version, however.)

The plane crashing to its doom after Kong plucks it from the sky was also miniature work using a smoking model plane. And the final tragic plunge of the ape to his death was a shot of the 18 inch Kong model simply filmed in slow motion as he topples down a beautifully crafted model of the entire Empire State Building.

The scene of Kong's body dead on the sidewalk surrounded by horrified crowds was the model once again filmed in extreme closeup with miniature rear projection of the people behind it.

By the way, the aerial views of New York City that formed a backdrop to the giant ape battling the planes sequence were actually highly realistic glass paintings executed by Mario Larrinaga, his brother Juan, and Byron



Crabbe. For heightened drama, O'Brien engineered an effect that allowed him to show strafing runs on the giant ape from the point of view of the pilots. He created this illusion by constructing a 24-foot wooden ramp down which the camera was moved toward the animated model of Kong. The viewer, as a result, feels as though he is sitting in the cockpit of a plane diving straight at the maddened gorilla.

Closeups of the Navy pilots and their gunners were shot inside the studio, using mock-up sections of the planes in front of rear-projected backgrounds. Interestingly, the producers/directors of the film, Cooper and Schoedsack, appear in these scenes



as the flight commander and his chief observer. Cooper decided that they ought to play these roles because, as he told Schoedsack, "We should kill the sonofabitch ourselves!" It's a classic case of a creator living out his fantasy of destroying his own magnificent creation! (What could the psychoanalysts make of that?)

In answer to whether or not the famous "lost" gorge footage of the crewmen being devoured by the giant spider was actually ever shot, it had been filmed, but later scrapped wisely by the producers who felt it was too gruesome (by 1933 standards) and also was so shocking, it tended to disrupt the flow of the action of the film. Knowing what to leave out, often helps a film artistically!

Another interesting point: the set of the Great Wall separating the native village from the surrounding jungle was taken from another film. This colossal construction, which, several years later, was to end in a blaze of cinematic glory during the Burning of Atlanta sequence in *Gone With the Wind*, was actually an old hand-me-down set from Cecil B. DeMille's 1926 religious epic, *King of Kings*, where it appeared as a sprawling set of ancient Jerusalem.

One final note: in addition to the great model and miniature work, the stop motion animation, the brilliant sound effects and dramatic Max Steiner theme music, one must give Cooper credit for envisaging a truly dreamlike (nightmare) setting, he called Skull Island. The dark, richly textured look of Kong's jungle domain owes a great deal to the drawings of Gustave Dore. One of the first things O'Brien did was to give to his assistants, Byron Crabbe and Mario Larrinaga, a series of woodcuts from the French artist's editions of the *Bible*, *The Divine Comedy*, and *Paradise Lost*. Using these illustrations as models, Crabbe and Larrinaga proceeded to turn out a dozen extremely dynamic preproduction drawings showing highlights of the action and establishing the film's brilliant dramatic visual style. The interior of Skull Island, with its lush vegetation, its huge rotting logs dripping with moss, its chasms, caves and murky swamps, consisted mainly of a number of tabletop sets made up of several detailed glass paintings and miniature constructions combined. In this way, O'Brien created great depth, the illusion of a lush paradise gone mad—receding endlessly into the unknown.

All told, it took over two years of painstaking work to bring Kong to life. It cost a mere \$650,000 to produce (ridiculously low by today's inflated standards and actually low by even 1930's Depression movie-making standards.) *King Kong* has made more than its share of profits in the years following its initial release. It accomplished much more than that, however. It became the American film fantasy adventure classic of all time! Its mythology has entered the mainstream of modern folklore. Its dreamlike insistence still intrigues us. It was once shown 17 times in a single week by one TV station in New York and each broadcast garnered huge ratings.

Even more recently, *Kong* was resurrected as a giant inflatable atop the Empire State Building. Thousands of real-life spectators cheered his return, standing at the base of the mighty structure looking skyward. Unfortunately, high winds and a terrible rip in the inflatable's chest sent Kong plummeting earthward once again, but we have a feeling he'll surface once more in the near future, for as Robert Armstrong eulogized over the slain ape: "Oh no: it wasn't the airplanes. It was beauty killed the beast!"

#### POSTSCRIPT:

Amazingly, despite its technical achievements, *King Kong* won no Oscars in the 1932/1933 Academy



Awards. Oscars weren't awarded in the Special Effects category until 1939. Willis O'Brien's genius was finally recognized, however, in 1949, when he won an Oscar for his special effects work in *Mighty Joe Young*. (Another giant ape film.) OBie died in 1962 knowing his mighty creation would live on for generations. To us in the film industry, OBie will always be fondly remembered as The Father of Stop Motion Photography, a dedicated craftsman whose pioneering efforts allow us to enjoy today new worlds of technical wizardry in film. If it were not for the Wizards of Wonderland, men like OBie and Harryhausen, the magic of the movies would be greatly diminished. Thank you, OBie, wherever you are!